



GAU 2812/\$

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Applicant: Leonard Forbes

Title: SILICON-GERMANIUM DEVICES FOR CMOS FORMED BY ION IMPLANTATION AND SOLID PHASE EPITAXIAL REGROWTH

Docket No.: 303.229US2  
Filed: August 11, 1998  
Examiner: Unknown

Serial No.: 09/132,157 ✓  
Due Date: N/A  
Group Art Unit: 2812

Assistant Commissioner for Patents  
Washington, D.C. 20231

We are transmitting herewith the following attached items (as indicated with an "X"):

- ☒ A return postcard.
- ☒ A Preliminary Amendment (3 Pages).
- ☒ A check in the amount of \$246.00 to cover the fee for additional claims as calculated below

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OCT 14 1998

GROUP 2100

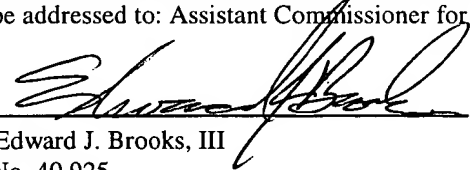
If an additional fee is required due to changes to the claims, the fee has been calculated as follows:

CLAIMS AS AMENDED						
	(1) Claims Remaining After Amendment		(2) Highest Number Previously Paid For	(3) Present Extra	Rate	Fee
TOTAL CLAIMS	18	-	20		x 22 =	\$0.00
INDEPENDENT CLAIMS	6	-	3	3	x 82 =	\$246.00
[ ] MULTIPLE DEPENDENT CLAIMS PRESENTED						\$0.00
TOTAL						\$246.00

Please consider this a PETITION FOR EXTENSION OF TIME for sufficient number of months to enter these papers and please charge any additional required fees or credit overpayment to Deposit Account No. 19-0743.

CERTIFICATE UNDER 37 CFR 1.8: The undersigned hereby certifies that this Transmittal Letter and the paper, as described above, are being deposited in the United States Postal Service, as first class mail, in an envelope addressed to: Assistant Commissioner for Patents, Washington, D.C. 20231, on this 29 day of September, 1998.

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By:   
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(GENERAL)

S/N 09/132,157

PATENT

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SILICON-GERMANIUM DEVICES FOR CMOS FORMED BY ION  
IMPLANTATION AND SOLID PHASE EPITAXIAL REGROWTH

SECOND PRELIMINARY AMENDMENT

B



Assistant Commissioner for Patents  
Washington, D.C. 20231

When the above-identified patent application is taken up for consideration, please amend the application as follows:

IN THE CLAIMS

Please add claims 24-37 for consideration in the initial examination. Claims 11-14 remain pending as well.

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24. (New) A semiconductor transistor formed on a silicon substrate, comprising:  
a  $\text{Si}_{1-x}\text{Ge}_x$  channel region, having a germanium molar fraction of  $x$ , and formed in the substrate, underneath a gate oxide and between a source region and a drain region.

25. (New) The transistor of claim 24, wherein the  $\text{Si}_{1-x}\text{Ge}_x$  channel region is formed from ion implanting germanium (Ge) into the substrate at a dose of approximately  $2 \times 10^{16}$  atoms/cm<sup>2</sup>, and wherein the Ge is implanted at an energy of approximately 20 to 100 keV.

26. (New) The transistor of 24, wherein the Ge is dispersed in the substrate to a depth of approximately 100 to 1,000 angstroms.

27. (New) The transistor of 24, wherein the Ge is dispersed in the substrate to a depth of approximately 300 angstroms.